

DEPARTMENT OF AGRICULTURE
CANADA

REPORT
OF THE
VETERINARY DIRECTOR GENERAL
(F. TORRANCE, B.A., D.V.S.)

FOR THE
YEAR ENDING MARCH 31, 1918

PRINTED BY ORDER OF PARLIAMENT



OTTAWA
J. DE LABROQUERIE TACHÉ
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1919

The Honourable T. A. CRERAR,
Minister of Agriculture.

SIR,—I have the honour to submit my report for the year ending March 31, 1918.

I have the honour to be, Sir,

Your obedient servant,

F. TORRANCE, B.A., D.V.S.,
Veterinary Director General.

REPORT

OF THE

VETERINARY DIRECTOR GENERAL.

OTTAWA, March 31, 1918.

INTRODUCTORY.

Absence on military service of a number of our veterinary inspectors, as well as others of our staff, has rendered it difficult at times during the past year, to carry on as we would like, but through the loyal efforts of our men and their willingness to do more than might reasonably be expected of them, our work has never flagged. The Meat and Canned Foods Inspection Division has had a strenuous year, owing to the enormous increase in the export of dressed meats and the new work undertaken in the inspection of meats during the loading of ships and the inspection of factories for the manufacture of oleomargarine. This has necessitated our inspectors working unusually long hours, but it has always been done cheerfully, and in no case has the work of inspection been delayed to the inconvenience of packers or shippers.

CONTAGIOUS DISEASES DIVISION.

It has been a good year for the health of Canadian livestock. Contagious pleuropneumonia, foot-and-mouth disease, and several other diseases which inflict great losses on agriculture in other parts of the world are still unknown in Canada. Those other diseases which we are constantly fighting have been kept within narrow bounds and with some of them satisfactory progress has been made toward their eradication. The various activities of this division are taken up under different heads as follows:—

GLANDERS.

A further reduction in the number of horses killed for this disease is shown in the total for this year of 188, compared with 228 killed in the previous year.

Year.	No. of Horses Destroyed.	Compensation Paid.
1908..	1,324	\$102,868 00
1909..	981	73,386 00
1910..	627	48,686 00
1911..	666	57,122 00
1912..	853	77,439 00
1913..	638	60,271 00
1914..	338	35,556 00
1915..	330	34,556 00
1916..	241	23,102 76
1917..	228	22,238 95
1918..	188	19,849 74

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Dominion.—Fourteen were killed on inspection, 152 at first test, 22 at second test, 2 at third test; total 190 (valued at \$29,955, at a cost of \$19,849.74).

Sixty-nine showed clinical symptoms.

Eight thousand eight hundred and five horses and 152 mules were tested with mallein of which 185 reacted. One hundred and seventy-six reactors were destroyed the remaining 9 were returned to the United States. Of the 185 reactors 69 showed clinical symptoms of glanders at or during the test.

Eight horses are under control for retest.

Of the 176 horses slaughtered, 10 were killed without compensation.

Nova Scotia.—Seventy-two horses tested and proved to be healthy.

New Brunswick.—One hundred and eight horses tested and proved to be healthy.

Quebec.—Ten were killed at first test, 1 killed at second test; total 11 (valued at \$1,620, at a cost of \$1,079.98).

Seven showed clinical symptoms.

Five hundred and eighty-eight horses and 1 ass were tested with mallein, of which eleven reacted and were destroyed. Of the 11 reactors, 7 showed clinical symptoms at or during the test. No horses are under control for retest.

Of the 11 slaughtered 1 was in the electoral district of Dorchester; 7 in the electoral district of Terrebonne, and 3 in the electoral district of Labelle.

Ontario.—Three hundred and twenty-eight horses, 3 mules, 5 asses tested and proved to be healthy.

Manitoba.—One thousand one hundred and seventeen horses, 14 mules, 4 jack asses tested and proved to be healthy.

Saskatchewan.—Fourteen were killed on inspection, 139 at first test, 19 at second test, 2 at third test; total 174 (valued at \$27,620 at a cost of \$18,293.12).

Sixty showed clinical symptoms.

Five thousand six hundred and two horses, 1 Shetland pony, 108 mules were tested with mallein, of which 166 reacted; 160 were destroyed and 6 returned to the United States. (Five entered Wood Mountain and 1 Big Muddy). Of the 166 reactors 60 showed clinical symptoms at or during the test.

Eight horses are under control for retest.

Of the 174 horses slaughtered, 23 were in the electoral district of Battleford, 7 in North Battleford, 33 in Kindersley, 6 in Humboldt, 18 in Last Mountain, 45 in Mackenzie, 7 in Maple Creek, 2 in Moose Jaw, 3 in Prince Albert, 3 in Saltcoats, 7 in Saskatoon, 9 in Swift Current, 11 in Weyburn.

Alberta.—Three were killed at first test, 2 in second test; total, 5 (valued at \$715, at a cost of \$476.64).

Two showed clinical symptoms.

Four hundred and seventy-eight horses and 6 mules were tested with mallein, of which 6 horses reacted; 5 were destroyed and 1 returned (entered Coutts, Alta.). Of the 6 reactors, 2 showed clinical symptoms at or during the test. No horses under control for retest.

Of the 6 slaughtered, 5 were in the electoral district of Macleod, 1 in Lethbridge.

British Columbia.—Five hundred and ten horses and 21 mules were tested with mallein, of which 2 reacted and were returned to the United States (1 entered Bridesville and 1 Huntingdon). No clinical symptoms.

Yukon Territory.—Two horses were tested at White Horse and proved healthy.

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HOG CHOLERA.

This disease has been the occasion of much of the work of this division during the year, not on account of its extent, for there is a reduction in the number of outbreaks, but by reason of our strict enforcement of preventive measures. These include the inspection and licensing of all parties feeding hogs on garbage collected from premises other than those of the feeder. Licenses are issued without any fee, but only to parties whose premises have been inspected and found satisfactory from a sanitary point of view, and also provided with the equipment necessary for cooking the garbage. Licensees are frequently visited by our inspectors to make sure that garbage is properly cooked and premises kept clean. It has been found necessary in a few instances to prosecute parties found feeding garbage without the license required by law, and convictions were secured and fines imposed.

The use of serum in the control of hog cholera during the year has been continued with satisfactory results, and has effected a substantial saving of hogs and compensation. The double treatment with simultaneous injection of serum and virus has not been used, except in the case of one farm in Essex county, where, by special arrangement with the owner of a large herd, the double method was used for experimental purposes. The object was to ascertain whether hogs after treatment by the double method could convey the infection of hog cholera to susceptible hogs in contact with them. Untreated hogs were placed in the same pen with the treated hogs and allowed to remain with them under uniform conditions for a sufficient period of time to permit natural infection to take place if infectious material were present. The animals remained healthy throughout the experiment, and were slaughtered at an abattoir, where one of our inspectors gave their carcasses a very careful examination.

All were found perfectly healthy with one exception. This pig showed a few slight lesions of an indefinite character, which could not be identified with hog cholera. So far as it went, the experiment indicates that there is not much danger of double-treated hogs *which remain healthy themselves*, transmitting infection to others.

Experience has shown that the double method of protecting swine against hog cholera is sometimes guilty of causing outbreaks of the disease. These unfortunate results are not very frequent, and are not so often reported now as when the treatment was in its infancy and both field veterinarians and manufacturers of serum and virus were less skilful than now. But the occasional occurrence of these disasters is quite sufficient to cause hesitation in using the treatment in localities where the disease is unknown and in valuable herds not exposed to danger of infection from an outbreak in its immediate neighbourhood.

The use of serum has been continued with satisfactory results. It has saved us a large amount of compensation and preserved from destruction a large amount of valuable meat. This method of dealing with the disease is free from the dangers of the double method, and much better suited, in my opinion, to the conditions in Canada in regard to this disease.

Garbage feeding continues to be the source of nine-tenths of our hog cholera, and although we are taking great precautions to render innocuous any infective material in garbage by insisting on having it cooked, we are not altogether successful. We can and do insist on adequate cooking facilities in all licensed garbage-feeding premises, but unless an inspector were constantly present we cannot be sure that they are properly used.

It therefore happens that careless feeders will sometimes feed garbage that is only half-cooked or even raw and, when infective matter is present, an outbreak of disease occurs.

STATISTICS OF HOG CHOLERA.

	No. of Hogs Destroyed.	Compensation.
1909..	1,881	\$ 9,912 00
1910..	1,127	7,087 00
1911..	1,346	8,818 00
1912..	4,249	23,446 00
1913..	8,466	52,785 00
1914..	34,779	196,981 00
1915..	34,470	188,562 00
1916..	5,700	33,695 00
1917..	4,623	30,497 98
1918..	2,212	13,031 20

In the Dominion, 2,212 hogs, valued at \$26,864 were destroyed as diseased, at a cost of \$13,031.20 in compensation.

Nova Scotia.—Six outbreaks of hog cholera occurred in Nova Scotia, in which 548 hogs, valued at \$6,153, were destroyed in the undermentioned districts, at a cost of \$2,877.30 in compensation.

Sixty-eight premises were also quarantined on suspicion, involving the control of 126 hogs.

District—	Number of Outbreaks.	Hogs Destroyed.
Antigonish and Guysborough..	1	5
Cumberland..	1	70
Halifax..	3	472
Hants..	1	1
	<hr/> 6	<hr/> 548

New Brunswick.—Two outbreaks of hog cholera occurred in New Brunswick in which 20 hogs, valued at \$252, were destroyed in the undermentioned districts at a cost of \$168 in compensation.

The premises of one owner were quarantined on suspicion, involving the control of six hogs.

District—	Number of Outbreaks.	Hogs Destroyed.
Royal..	1	11
Westmoreland..	1	9
	<hr/> 2	<hr/> 20

Quebec.—Ten outbreaks of hog cholera occurred in Quebec in which 231 hogs, valued at \$3,027, were destroyed in the undermentioned districts, at a cost of \$1,978 in compensation.

Six premises were also quarantined on suspicion, involving the control of 160 hogs.

District—	Number of Outbreaks.	Hogs Destroyed.
Champlain..	1	2
Jacques Cartier..	2	52
Laval-Two Mountains..	1	2
Levis..	1	60
Maisonneuve..	2	95
Quebec West..	1	17
Richelieu..	1	1
Three Rivers and St. Maurice..	1	2
	<hr/> 10	<hr/> 231

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Ontario.—Forty outbreaks of hog cholera occurred in Ontario in which 976 hogs, valued at \$12,306, were destroyed in the undermentioned districts at a cost of \$6,535.92 in compensation.

One hundred and fifty-three premises were also quarantined on suspicion, involving the control of 2,046 hogs.

Twenty-nine hogs, valued at \$404, were destroyed for purposes of examination, but no evidence of hog cholera was found.

District—	Number of Outbreaks.	Hogs Destroyed.
Algoma E. R.	1	1
Algoma W. R.	1	1
Carleton.	1	10
Essex N. R.	2	40
Essex S. R.	1	8
Grey N. R.	1	4
Hamilton W.	1	100
Hastings E. R.	1	151
Hastings W. R.	1	14
Huron N. R.	1	82
Kent.	2	57
Lambton E. R.	4	65
Lincoln.	2	45
Ontario S. R.	1	36
Parry Sound.	1	39
Peel.	1	19
Renfrew N. R.	2	99
Simcoe, N. R.	3	42
Temiskaming.	1	1
Toronto South.	2	74
Waterloo N. R.	1	14
Welland.	3	20
Wellington N. R.	1	8
West York.	2	27
York E. R.	1	4
York W. R.	1	8
York S. R.	1	7
	40	976

Manitoba.—Six premises were quarantined on suspicion, involving the control of 323 hogs.

Two hogs, valued at \$27 were destroyed for purposes of examination, but no evidence of hog cholera was found.

Saskatchewan.—Five premises were quarantined on suspicion, involving the control of 75 hogs.

Two hogs, valued at \$24 were destroyed for purposes of examination, but no evidence of hog cholera was found.

Alberta.—Four outbreaks of hog cholera occurred in Alberta, in which 437 hogs, valued at \$5,126 were destroyed in the undermentioned districts at a cost of \$1,471.98 in compensation.

Thirty-four premises were also quarantined on suspicion, involving the control of 879 hogs.

Seven hogs valued at \$83 were destroyed for purposes of examination, but no evidence of hog cholera was found.

District—	Number of Outbreaks.	Hogs Destroyed.
Bow River.	1	8
East Calgary.	1	373
East Edmonton.	1	53
Macleod	1	3
	4	437

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British Columbia.—The premises of one man were quarantined on suspicion, involving the control of 11 hogs.

One hog, valued at \$7, was destroyed for purposes of examination, but no evidence of hog cholera was found.

DOURINE.

Since the discovery of the complement fixation test for the diagnosis of this disease, steady progress has been made in its eradication. Some difficulty has been experienced in cleaning up the herds on the Blood Indian reserve, but even in this last stronghold of the disease, satisfactory work has been done, and we hope before long to have the disease entirely stamped out in Canada.

	Horses Destroyed.	Compensation.
1913..	18	\$ 2,096 00
1914..	394	32,080 00
1915..	382	31,363 00
1916..	220	16,666 00
1917..	48	3,222 63
1918..	16	1,340 66

A total of 16 animals, valued at \$2,011, were slaughtered as being affected with this disease, at a cost of \$1,340.66, distributed as follows:—

District—	Province.	Suspected and Quarantined.	Slaughtered.
Battleford..	Saskatchewan.	3	
Kindersley..	"	4	
Maple Creek..	"	44	1
Prince Albert..	"	8	
Saskatoon..	"	1	
Bow River..	Alberta.	185	
Lethbridge..	"	44	2
Macleod..	"	..	13
Medicine Hat..	"	2	
Victoria..	"	12	
Red Deer..	"	1	
		304	16

One horse, inspected for entry at Bridesville (electoral district of Yale), B.C., was returned to the United States suspected of being infected with dourine.

SCABIES OR MANGE.

A few scattered outbreaks of horse mange have occurred and been dealt with successfully by our inspectors.

Cattle mange is a much more serious proposition, and has given the department much concern for many years. Fortunately the disease in Canada is confined to a definite area in southern Alberta and the neighbouring part of Saskatchewan. The rest of Canada is free from cattle mange. The cattle in the affected area are under restrictions which prohibit their movement outside the area unless for immediate slaughter at a certain designated abattoir, or, unless, in the case of cattle for other purposes than immediate slaughter, they have been twice dipped under the supervision of one of our officers. Herds within the area which are known to be mangy are kept under quarantine and required to be dipped under supervision.

These measures are gradually lessening the extent of the infection, and as soon as part of the area is known to have been freed from infection, it is released from restrictions on the movement of cattle. In this way we have from time to time, as circumstances permitted, reduced the area known as the "mange area."

Scabies in sheep or "sheep scab" is practically unknown in Canada. The only outbreak occurring during the year affected only five sheep on two premises in Manitoba. These were found in a rather remote Icelandic settlement in the northern part of the province and were successfully treated under the supervision of our officers.

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HORSE MANGE.

Quebec.—One outbreak, 1 animal affected, 1 animal quarantined.

Manitoba.—One outbreak, 5 animals affected, 5 animals quarantined.

Saskatchewan.—Five outbreaks, 29 animals affected, 113 animals quarantined.

Alberta.—On one man's premises, 39 animals were quarantined on suspicion but mange did not develop.

A total of 6,311 horses and 7 mules were inspected on being presented for shipment from the quarantined area in Alberta and Saskatchewan.

CATTLE MANGE.

Province—	Outbreaks.	Animals Affected.	Animals Quarantined.
Saskatchewan..	7	119	15,358
Alberta..	33	1,227	66,877

Some 55,650 cattle were inspected on being presented for shipment from the quarantined area in Alberta and Saskatchewan, and 259,443 cattle were inspected in Winnipeg on arrival from points west thereof.

SHEEP SCAB.

In Manitoba, 5 animals on two premises were found to be affected with sheep scab, involving the control of 457 animals on fifteen premises as follows:—

District—	Affected.	Quarantined.
Lisgar..	5	171
Portage la Prairie..		19
Provencher..		148
Springfield..		119
		577

In accordance with the quarantine regulations, 43,975 sheep imported into Canada were quarantined for the prescribed period of thirty days.

RABIES.

In British Columbia, one owner's premises were quarantined in the district of Yale.

In Alberta one owner's premises were quarantined in the district of East Edmonton.

In Ontario, 52 premises were quarantined, distributed as follows:—

District—	Premises Quarantined.	District—	Premises Quarantined
Brantford..	1	Victoria and Haliburton	1
Durham..	1	Welland	8
Haldimand..	3	Wentworth	3
Hamilton West	1	West York..	1
Huron N. R..	1	York E. R..	1
Lincoln...	2	York, S. R...	2
Norfolk..	5	York, W. R..	1
Peel..	7		
Peterborough, W. R	10		52
Toronto South..	4		

No fatalities in human beings were reported.

ANTHRAX.

The following outbreaks were reported and dealt with during the year:—

Province—	Outbreaks.	Animals Quarantined.
Quebec..	1	33
Ontario..	1	93

Eighteen animals quarantined in Saskatchewan, but examination failed to reveal evidence of anthrax.

TUBERCULOSIS.

Municipal Testing.

After a year's experience in the working of the new tuberculosis regulations, it was decided to amend them in one or two respects with the object of extending their scope and making more liberal compensation for reactors. The regulations were, therefore, amended to permit them to apply to any city or town applying for federal aid. Formerly such aid was limited to cities and towns of a population of 5,000 or more. Compensation was raised to two-thirds the appraised value of the animal from one-third formerly, so that the owner of a reactor destroyed under these regulations may now receive a maximum of \$53.33 for a grade cow, or \$166.66 for a pure-bred registered one.

These changes have been very satisfactory to the dairymen, and have resulted in a wider extension of the work of control. Ottawa and North Battleford applied for federal aid and during the year the first test was applied to the herds supplying both these places. No unpleasant friction between owners and the department was observed, and a number of reactors were got rid of which had been regularly supplying milk to the citizens.

The importance of this work to the health of a community can hardly be over-estimated, especially to the welfare of the child population. It was found by our tests that some herds were supplying milk to be consumed in the raw unpasteurized state, when almost every cow in the herd was diseased. This milk must have been highly dangerous for the children drinking it, yet the parents were probably quite satisfied if its appearance and taste were all right.

Experiments have proved that young pigs fed on tuberculous milk become tuberculous to the extent of 80 per cent if they receive only two or three feeds of it. When fed continuously on it for a month, 100 per cent became infected.

There is no reason to believe that children are not equally susceptible to the effect of consuming tuberculous milk. The results are not so evident as in the case of pigs, but far more disastrous to the human race. Much human tuberculosis comes from drinking tuberculous milk, and every effort should be made to prevent it by putting the tuberculous cow out of business.

Urban municipalities might well give some consideration to this important health matter, and protect the lives of the little ones by permitting only wholesome milk, free from tuberculosis to be sold. The tuberculosis regulations show how easily, and at how little cost to a town this may be done.

Since this work was begun there have been over seven hundred diseased cows removed from the dairies supplying four cities and towns. The evil potentialities of seven hundred diseased cows in spreading tuberculosis cannot be estimated. We can only be thankful that their opportunity is gone, and hope that the evil they have done will not live after them.

Statistics on this work are difficult to compile. Dairymen seldom retain a cow more than a year or two. Sometimes it is the practise to sell a cow as soon as her

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period of lactation is finished, and to replace her with another which is just commencing or, in the parlance of the dairy, a "springer." This continual changing of cows makes the work of testing almost a continuous performance.

Cows to replace those sold out of the dairy, or condemned as reactors to the test, must be tested by our inspector before being added to a clean herd, and it is therefore found impracticable to test these herds, as we do breeding herds, by regular semi-annual tests. For the same reason, the figures of testing can never be completed, and we can only report the number tested to this date and the number of reactors found.

Municipal Testing to March 31, 1918.

	Tests Made.	Reactors.	Per cent.
North Battleford	929	101	10.8
Saskatoon	9,144	292	3.1
Regina	3,579	146	4.07
Ottawa	2,151	166	7.7
Total	15,803	705	4.46

N.B.—The number of tests made does not correspond with the number of cows tested, as many of the cows have been tested more than once, and some of them oftener.

Saskatoon Statistics.—Seven hundred and thirty-five cattle were submitted to first test, 481 to second test, 423 to third test, 291 to fourth test, 62 to fifth test, 2 to sixth test.

Thirty-four reactors slaughtered, value \$2,185, compensation \$1,416.66, 3 reactors, purchased subject to test, returned previous owners, 4 reactors, owner's license cancelled, 1 reactor, not yet slaughtered, a total of 42 reactors.

In addition to the above, 3 animals which reacted, 1916-17, were slaughtered this year, value, \$270; compensation, \$90.

Regina Statistics.—One thousand one hundred and fifty cattle were submitted to first test, 255 to second test, 74 to third test, 57 to fourth test.

Eighty-one reactors slaughtered, value, \$4,703; compensation, \$3,135.33.

One reactor slaughtered without supervision, not valued.

Three reactors removed from premises.

Three reactors not yet slaughtered, a total of 88 reactors.

North Battleford.—Two hundred and seventy-one cattle were submitted to first test, 85 to second test.

Forty-eight reactors slaughtered, value, \$2,770; compensation, \$1,846.66.

Ottawa.—One thousand and eighteen cattle were submitted to first test, 39 to second test.

One hundred and eighteen reactors slaughtered, value, \$7,006; compensation, \$4,660.66.

One reactor died.

Twenty-three reactors not yet slaughtered, a total of 142 reactors.

A total of 833 cattle were tested on being imported into Canada, 10 of which reacted, 5 were classed as suspicious, and 818 proved healthy; 1,067 cattle were tested for export, 32 of which reacted, 7 were classed as suspicious, and 1,028 proved healthy; 3,025 cattle were tested, some for shipment to different provinces of the Dominion and others in herds under supervision of this department, 252 of which reacted, 54 were classed as suspicious, and 2,719 proved healthy; 4,582 cattle were tested by private practitioners, 476 of which reacted, 104 were classed as suspicious, and 4,002 proved healthy; all reactors were permanently earmarked by a veterinary inspector.

IMPORT INSPECTIONS.

Import inspections from United States and Newfoundland were: 56,649 horses, 11,102 mules, 8,301 cattle, 43,975 sheep, 204 swine, 480 goats, 11 asses, 7 donkeys, 4 camels, 2 dogs, 2 elephants, 6 Shetland ponies, 9 ponies.

Import inspections from Europe and elsewhere were: 62 horses, 613 cattle, 903 sheep, 5 goats.

A total of 5,297 horses were tested on arrival from the United States and allowed to proceed to their destination.

PURE-BRED IMPORTS.

HORSES.

Breed—	Great Britain.	United States.	Total.
Belgian.. . . .	....	58	58
Clydesdale.. . . .	45	10	55
Percheron.. . . .	....	252	252
Shire.. . . .	1	5	6
Standard.. . . .	....	43	43
Thoroughbred.. . . .	16	11	27
Welsh Ponies.. . . .	....	10	10
Total.. . . .	62	389	451

CATTLE.

Breed—	Great Britain.	United States.	Total
Aberdeen Angus.. . . .	41	114	155
Ayrshire.. . . .	64	5	69
Brown Swiss.. . . .	....	7	7
Galloway.. . . .	1	....	1
Guernsey.. . . .	....	13	13
Hereford.. . . .	....	150	150
Holstein.. . . .	....	17	17
Jersey.. . . .	....	23	23
Polled Angus.. . . .	....	2	2
Shorthorn.. . . .	514	58	572
West Highland.. . . .	3	....	3
Total	613	289	1,002

GOATS.

Breed—	Great Britain.	United States.	Total.
Anglo-Nubian.. . . .	5	....	5
K.C.. . . .	....	5	5
Toggenburg.. . . .	..	11	11
Total.. . . .	5	16	21

SHEEP.

Breed—	Great Britain.	United States.	Total.
Cheviot.. . . .	6	....	6
Cotswold.. . . .	25	....	25
Hampshire.. . . .	20	....	20
Horned Dorset.. . . .	....	6	6
Leicester.. . . .	17	6	23
Lincoln.. . . .	178	....	178
Oxford.. . . .	40	....	40
Romney Marsh.. . . .	282	....	282
Shropshire.. . . .	308	4	312
Southdown.. . . .	10	10
Suffolk.. . . .	1	1
West Highland.. . . .	2	2
Total.. . . .	889	16	905

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SWINE.

Breed—	Great Britain.	United States.	Total.
Berkshire.. . . .		2	2
Chester White.. . . .		45	45
Duroc Jersey.. . . .		2	2
Ohio Improved Chester.. . . .		6	6
Poland.. . . .		2	2
Total.. . . .		57	57

DISEASED IMPORTS.

Port.	No. Animals in Infected Shipment.	No. of Ship- ments.	No. of Animals Infected.	Origin.	Action.
Highwater, Que.	Horses 1	1	1	United States.	Returned.
Wood Mountain, Sask.	" 47	5	5	"	All returned.
Big Muddy, Sask.	" 1	1	1	"	Returned.
Saskatchewan General	" 19	2	2	"	Reactors destroyed
Coutts, Alta.	" 2	1	1	"	Both returned.
Bridesville, B.C.	" 6	2	2	"	All returned.
Huntingdon, B.C.	" 1	1	1	"	Returned.
	77	13	13		

ANIMALS INSPECTED FOR EXPORT.

Port.	Horses.	Cattle.	Sheep.	Swine.
Charlottetown to Newfoundland.. . . .	73	386	310	476
Summerside to Newfoundland.. . . .			10	
Halifax to Newfoundland.. . . .	4			
" Great Britain.. . . .	1,688			
" St. Pierre and Miquelon.. . . .	1	41	6	
" Bermuda.. . . .	22	49	8	4
Sydney to Newfoundland.. . . .	144	1,594	126	123
" St. Pierre and Miquelon.. . . .	1	2		
St. John to Bermuda.. . . .	3	6		30
" United States.. . . .			32	
Toronto to United States.. . . .		12,482	16,313	350
Total.. . . .	1,936	14,560	16,805	983

LABORATORIES.

The staff of the Biological Laboratory at Ottawa has had a busy year. The output of biological products has increased. The following table will show the number of doses of biological products disbursed at the Laboratory during the year:—

Month.	Mallein.	Tuber- culin.	Tuber- culin Special.	Single Blackleg Vaccine.	Double Blackleg Vaccine.	Anthrax Vaccine.	Strangles Vaccine.
April.	2,025	2,400		49,570	500	32	
May.		2,000		21,890	660	20*	100
June.	2,025	2,260	200	17,000	272	190	50
July.				29,350			160
August.	4,000	2,040		9,100			
September.	6,000	2,000		1,900			
October.		5,000		33,100			
November.	2,000	3,520		27,300	640	105	100
December.		1,500		8,900			113
January		2,900		8,950			375
February.	2,300	2,256		2,300			50
March.	2,000	2,200		40,550	1,008		100
	20,350	28,076	200	249,910	3,080	347	1,048

* "First" Anthrax Vaccine only.

It is gratifying to know that the Biological Laboratory is almost entirely self-supporting. The staff consists of four veterinary pathologists, two laboratory helpers, a stenographer, and a caretaker. After deducting the salaries of the staff, and paying for the various instruments, chemicals, etc., required at the laboratory, the cost of running the latter for the year has been but \$1,760 in excess of the revenue derived from the sale of biological products of the laboratory during the year.

But during the year fifty thousand doses, approximately, of tuberculin and mallein (as well as several hundred doses of abortion vaccine), manufactured at the laboratory, were given away by the department. These were used by the department's inspectors, in testing for tuberculosis and glanders the stock of farmers and stockmen throughout the country. The cost of manufacturing all this material is included in the cost of running the laboratory for the year, as above referred to. Had a charge, at current market rates, been made, a large revenue—far in excess of the cost of running the laboratory—would be shown to the credit of the laboratory for the year.

Owing to the increasing demand for these preparations, and the broadening scope of the work of the laboratory, it will be very necessary in the immediate future to provide better and more ample facilities for the manufacture of the products in question. Better facilities will, of necessity, also be required for research work. There are many obscure diseases of animals in Canada which should be studied, and our present buildings and equipment will require to be enlarged.

In addition to research work and the manufacture of biological products, the laboratory staff has rendered invaluable aid to the Field Veterinary Division, the Meat and Canned Foods Division, and to the farmers of Canada at large, through its examination of specimens submitted for diagnosis. Some eight hundred specimens were examined and reported upon by the laboratory during the year.

It is considered that the first and foremost function of the laboratory is to aid veterinarians in the study and diagnosis of animal diseases. The publications of the Biological Laboratory at Ottawa, and also of the laboratories at Lethbridge, Alta., and Agassiz, B.C., are nearly all of them of a technical nature. There are, however, a few publications, issued in the form of bulletins, available to the public and readily intelligible to the lay mind. In addition, a large number of the "studies" of diseases which have been published are to be found in the various scientific journals. The results of the research work of the laboratory in connection with animal diseases have in many instances been with little delay available to the farmer and stockman. On the other hand, of course, in many cases extended study and work, requiring the exercise of patience and perseverance, are necessary before a practical, final and satisfactory result can be obtained.

For example, we have definitely proved that the common bracken (*Pteris aquilina* L.) has caused, beyond doubt, the death of many horses on the Pacific coast. Our experiments have clearly shown the quantity of this poisonous plant which will produce the disease, known as bracken poisoning. Moreover, we have devised ways and means for the cure and the prevention of the affection.

Our experiments in connection with *Haematuria*, or red water, have also yielded very encouraging results, and we hope to give out ere long some precise information in regard to the control of this disease.

Swamp fever is being studied, both at Ottawa and Lethbridge; and it is gratifying to know that we are receiving the active co-operation of the officials of the Bureau of Animal Industry at Washington in this pursuit.

Our experiments in contagious abortion in cattle are continuing to meet with success. It is now proposed that our vaccine for contagious abortion in cattle should be supplied to veterinarians under the same regulations which govern the disbursement of tuberculin.

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In addition to our experiments with bacterial and other diseases, the laboratory staff has taken up the study of parasites, especially of Warbles in cattle and Bots in horses. These parasites are the cause of much annoyance and injury to these animals.

The branch laboratories at Lethbridge and Agassiz are doing much good work in the study and eradication of local diseases in Alberta and British Columbia.

Owing to the absence of some of our pathologists, who are still doing military service in Europe, the work of the Biological Laboratory has had to be curtailed in some directions; but the necessary tests, especially for dourine in horses, have continued with gratifying results.

MEAT INSPECTION DIVISION.

The extremely heavy work referred to in my previous report has continued during the year ending on March 31, 1918. This has been due not only to the heavy demand for meat foods for the Allied Armies and the inhabitants of the European countries, but to the fact that a number of our younger men resigned in order that they might proceed overseas, and to the difficulty already existing of procuring a sufficient number of qualified veterinarians to carry on the work.

Owing to the steady advance of the cost of living, upon representations made to the Minister, the minimum and maximum salaries of our employees were increased, that for veterinary inspectors now being from \$1,400 to \$2,000 and for lay inspectors from \$1,000 to \$1,200 or, in particular cases, \$1,400. This increase, while absolutely necessary, is at the same time very much appreciated by our staff.

During the year, Dr. Barnes, chief inspector, Meat and Canned Foods Act, visited all the establishments under inspection in Western Canada, going into the work in more or less detail in each establishment with a view to securing greater uniformity in the methods by which the work is carried on throughout the Dominion. Particular attention was paid to the necessity for sanitary construction and equipment, and from the reports received from our officers his visit has resulted in marked improvements along these lines.

Early in December the Canada Food Board, acting under the War Measures Act, procured an Order in Council permitting the use of oleomargarine in Canada. The administration of this measure, in so far as the importation and manufacture of the product was concerned, was entrusted to this branch. Considerable extra work was necessarily forced upon the staff, yet after a slight delay immediately following the passing of the order, licenses to import and to manufacture were issued. Some 404 applications were received from persons or firms desiring to become importers, but seventy-five per cent of these licenses were not used owing to the fact that there was an evident misunderstanding of the terms of the order. Many of those applying for permission to import were under the impression that a license was required for the retail sale of this product. At the end of the fiscal year there were only two firms engaged in the actual production of oleomargarine in this country. Although many others applied for licenses to manufacture, their requests were refused on the grounds that the premises in which they wished to operate did not conform to our requirements regarding sanitary conditions and equipment and that the volume of business to be carried on was not such as would warrant this department in the expenditure necessary to maintain inspection. The work involved in the control of oleomargarine, while new, has been well carried out and the requirements of the law have been satisfactorily observed. Special officers have visited the importers from time to time and have reported that the restrictions of the order are being obeyed.

The usual increases in salary were given at the beginning of the fiscal year.

The annual qualifying examinations for veterinarians were held by the department at various points throughout Canada on April 20, and at Laval University, Montreal, on May 18, 1917. Fifty candidates wrote on these examinations, of whom

26 were successful and 14 have been appointed to positions in the Meat Inspection Division. Owing to the difficulty in securing sufficient help from this source, owing in part to the number of these men who were required for military service, an arrangement was made with the Civil Service Commission whereby assistant veterinary and lay inspectors might be appointed temporarily upon condition of passing the required examination at the first opportunity. This arrangement worked very well indeed and assisted us materially during the past season.

I also wish to express my gratification at the manner in which the managements in charge of the different establishments have met our requirements in connection with new equipment and modern construction. The old wooden equipment, once so common in packing houses, is rapidly disappearing. This is very much appreciated, especially in view of the fact that metal of all kinds is more or less difficult to obtain and high in price.

The only establishment to go under permanent inspection during the year was that of Oxo, Limited, Montreal, which is officially known as No. 3.

From present indications, however, we may look forward to an early increase in the number of establishments, and in many of those already in operation there will be undoubtedly a considerable amount of overhauling and in several large additions will be made. A notable feature in connection with these additions and changes is the evident desire of the managements to use only the best plans and to have the construction conform to the latest scientific and sanitary ideas.

Violations of the Meat and Canned Foods Act necessitated legal action by the department three times during the past year. In the case of an illegal shipment of meat from Quebec to Nova Scotia the dealer concerned was fined \$100 and costs, this being his second offence. A nominal fine of \$25 and costs was imposed on a packing company under inspection because one of its employees had tampered with official government markings. Proceedings were also instituted against a railway company but withdrawn upon the agreement of the company to pay all costs and to suspend the employee who had been guilty of permitting the transportation of meats without a certificate.

The following statistics are respectfully submitted:—

(a) Total slaughter:—

Cattle—	739,085.....	Increase over 1916-17.....	90,226 head or 13.90%
Sheep—	336,897.....	Decrease under 1916-17.....	79,678 head or 19.12%
Swine—	2,129,682.....	Decrease under 1916-17.....	115,829 head or 5.16%

(b) The provinces show increases or decreases as follows:—

Province.	Cattle.		Sheep.		Swine.	
	Head.	Per cent.	Head.	Per cent.	Head.	Per cent.
Ontario.....	+36,615	12.16	— 8,424	5.03	—94,561	7.01
Quebec.....	—10,607	5.68	—33,381	26.42	—49,604	14.66
Manitoba.....	+34,230	48.08	—16,445	53.55	+ 6,896	3.61
Saskatchewan.....	+ 9,111	108.00	— 486	9.80	+ 4,635	13.85
Alberta.....	+16,100	25.43	—14,263	35.65	+34,568	13.08
British Columbia.....	+ 3,682	20.18	—10,004	48.81	—17,205	33.63
New Brunswick.....	— 36	9.47	+ 3,073	36.83
Nova Scotia.....
Prince Edward Island.....	+ 1,131	53.57	+ 252	13.84	— 558	3.20

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(c) The percentage of slaughter for each province to the total for all Canada:—

Province.	Cattle.	Sheep.	Swine.
	Per cent.	Per cent.	Per cent.
Ontario.....	45.33	47.22	58.94
Quebec.....	23.84	27.60	13.56
Manitoba.....	14.27	4.23	9.30
Saskatchewan.....	2.37	1.33	1.80
Alberta.....	10.74	7.64	14.04
British Columbia.....	2.97	3.11	1.60
New Brunswick.....	0.04	3.39	....
Nova Scotia.....	....	....	....
Prince Edward Island.....	0.44	5.48	0.76

SLAUGHTERINGS.

Cattle.—Quebec and New Brunswick are the only provinces showing a decrease, the others all show increases.

Sheep.—New Brunswick and Prince Edward Island show an increase, while the other provinces show large decreases.

Swine.—The three Prairie Provinces are the only ones to show an increase in hogs, all the others being below last year.

Provincial percentage to total kill (see table c).

It is to be noted here that the four western provinces increased their percentage of slaughter of all animals killed, except Alberta in sheep and British Columbia in sheep and swine. Ontario increased its kill of sheep by 7 per cent, while cattle and swine are about the same as last year. Quebec is below last year in cattle, sheep and swine, 5, 2.75 and 1.50 per cent, respectively.

During the course of reinspection the following meats were condemned:—

	Cattle.	Sheep.	Swine.	Poultry.
	lbs.	lbs.	lbs.	lbs.
Bruised.....	9,317	15	38,037	....
Decomposed.....	108,458	1,349	76,312	....
Dirty.....	307,173	1,525	140,910	....
Sour.....	105,784	1,352	135,770	....
Various.....	433	....	644	1,131
Total.....	531,165	4,241	391,673	1,131

Total amount condemned on re-inspection, 928,210 pounds.

Customs statistics show that Canada imported and exported the following during the year:—

	Imports.	Exports.
Cattle (live).....	3,515	191,356
Sheep ".....	37,881	134,705
Swine ".....	....	15,647
Beef, lbs.....	13,390,320	86,738,113
Mutton ".....	2,298,630	192,224
Pork ".....	84,889,787	222,759,571
Lard ".....	1,401,147	1,955,222
Canned meats, lbs.....	620,042	13,422,624

CARCASS CONDEMNATIONS.

Cattle.—The percentages of carcasses condemned to total kill is much lower this year when compared with last year, 1.07 per cent against 1.68 per cent, while the percentage of those condemned for tuberculosis is very much higher namely, 58.42 per cent against 39.90 per cent last year, largely due to increased number of canners slaughtered.

Those condemned for bruises, cripples and imperfect bleeding are below last year, 3.22 per cent against 3.41 per cent.

Emaciated condemnations are below last year's, 1.80 per cent against 5.61 per cent.

Condemnations for *Cysticercus bovis* are 2.64 per cent against 2.37 per cent last year.

Immaturity condemnations are 22.41 per cent against 37.75 per cent last year.

The proportion of calves to total slaughter is 14.09 per cent against 14.83 per cent last year.

Sheep.—Sheep condemned to total kill is 0.13 per cent against 0.12 per cent last year.

Swine.—The number condemned this year is, on a percentage basis the same as last year, 0.27 per cent. This is satisfactory in itself. The percentage condemned for tuberculosis of this total is much higher than last year, namely 75.25 per cent against 62.22 per cent.

Cysticerous cellulosæ accounts for 5.81 per cent condemned against 8.10 last year. It is gratifying to find that only 6 carcasses were condemned this year for hog cholera.

In comparing our reports, it is satisfactory to find that although we exported rather more cattle than a year ago, the proportion of young cattle (1 year or less) is much lower, 23.68 per cent against 33.0 per cent last year, the total number of cattle exported in 1916-17 being 166,236, this year 191,356.

Our live sheep exported being 134,705 against 59,340 last year, the percentage of 1 year and less being 84.65 per cent and 73.0 per cent respectively.

The exports of meats are all higher than a year ago although we did not import nearly as much as last year especially in pork.

It is regrettable that our hog killings have decreased again this year but it is to be hoped from the measures taken in November and December, 1917, that a large increase of swine will be the result in September, 1918. With the continued high prices there should be no doubt about raising hogs, anyway it should be a patriotic duty even at a loss.

Below you will find a comparison between hog killings of Canada, Denmark, and Ireland for the calendar years:—

HOG KILLINGS.

Year (January to December).	Canada.	Denmark.	Ireland.
1912.....	1,650,966	2,084,786	1,416,490
1913.....	1,564,246	2,215,850	1,181,285
1914.....	2,255,479	2,654,041	1,266,620
1915.....	2,616,461	1,960,965	1,376,063
1916.....	2,313,389	1,534,011	1,277,900
1917.....	2,086,009	*1,000,000	967,475

*Estimated.

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The following summary shows the result of post mortem inspections of cattle, sheep, and swine, from April 1, 1917, to March 31, 1918:—

Cattle marked "Canada Approved"	731,160
Carcases of cattle "Condemned"	7,925
Percentage of cattle "Condemned"	1'07
Portions of cattle "Condemned"	237,212
Sheep marked "Canada Approved"	336,461
Carcases of sheep "Condemned"	436
Percentage of sheep "Condemned"	0'13
Portions of sheep "Condemned"	90,332
Swine marked "Canada Approved"	2,123,895
Carcases of swine "Condemned"	5,787
Percentage of swine "Condemned"	0'27
Portions of swine "Condemned"	936,040
Total number of carcasses "Passed"	3,191,516
Total number of carcasses "Condemned"	14,148
Percentage of carcasses "Condemned"	0'44
Total number of portions "Condemned"	1,263,584

In addition to the animals slaughtered at inspected establishments, the following amounts of dressed and cured meats and lard, etc., were received during the fiscal year from foreign countries:—

	Pounds.
Beef.. .. .	14,629,444
Mutton.. .. .	368,566
Pork.. .. .	84,362,851
Lard.. .. .	1,320,858

DISEASES FOUND AT ESTABLISHMENTS UNDER INSPECTION.

Diseases.	Cattle.			Sheep.			Swine.			Poultry.
	Carcases.	Portions.	Lb.	Carcases.	Portions.	Lb.	Carcases.	Portions.	Lb.	
Abscess.....	7	38,548		3	246		7	5,847		
Actinomycosis.....	54	41,309					2	2,441		
Adhesions.....		11,579			384			15,121		
Arthritis.....	3	5		2	17		49	253		
Angiomatosis.....		1,643								
Bruises.....	96	88,418	9,317	19	1,147	15	22	19,884	38,037	
Cripples.....	12	300		5	39		3	7,785		
Cysts.....		1,318			58			7,160		
Cysticercus Bovis.....	209	2,743								
“ Cellulosæ.....							394	133		
“ Ovis.....	1			4	158					
“ Tenuicollis.....				1	121					
Congestion.....	1	25			764					
Cirrhosis.....		41						507		
Decomposed.....			108,458	1		1,349		1,015	76,312	
Dirty.....		764	307,173		40	1,525		972	140,910	
Emaciation.....	142			167			28			
Enteritis.....	16			2			41			
Emphysema.....	2	1					6	193		
Hernia.....		2			2			100		
Hydræmia.....	89			38			4			
Hog Cholera.....							6			
Immaturity.....							3			
Improper Bleeding.....	1,776						70			
Inflammation.....	147			53			40			
Inflammation.....	3						20			
Icterus.....	9			7				195		
Induration.....		1								
Metritis.....	32			7			14			
Mucoid Degeneration.....	213									
Melanosis.....	5	12					2	1		
Necrosis.....	2	129			2,574			7,950		
Nephritis.....	11			2			9			
Parasites.....		12,285			84,759		1	88,648		
Pericarditis.....	48			3			7			
Peritonitis.....	34			14			89			
Pleuritis.....	20			5			75			
Pneumonia.....	78			65			131			
Pyæmia or Septicæmia.....	194			21			315			

FRUIT AND VEGETABLES.

The campaign for increased production and the conservation of food products created a lively interest in the best methods of dealing with the surplus of our fruits and vegetables. The regular factories engaged in this trade were offered all the raw material that they could handle; "Community Centre" canning factories were established; Farmers' Clubs, Red Cross, and other patriotic organizations took up this work in earnest, with the result that a larger quantity of fruit and vegetables than was ever previously taken care of in Canada was prepared for consumption during the period of the year when it was impossible to obtain this class of food in its natural state. Vast quantities were shipped overseas, not particularly to enter the trade but for the use of the Allied armies. Yet, with the high cost of labour, tin, and all material used in connection with this business, the increased pack did not lower the price to the consumer.

The quality of the product packed showed an improvement over previous years, and the sanitary condition of the establishments in operation is advancing steadily, yet much remains to be done along this line. It is hoped that at the close of the war, when prices again become normal, much of the old unsanitary wooden equipment may be dispensed with.

The insistence by the British Ministry of Food in connection with all their contracts that the contents of the cans be truthfully described has more than ever convinced me that immediate action must be taken to see that the consumer can by the label reasonably satisfy himself as to the quality of the contents. Until this is done the suspicion which at the present time exists in the minds of many Canadians regarding the quality of canned products will continue. This is indeed unfortunate, and I trust that those engaged in this industry will co-operate with the department in an insistence upon and faithful observance of the requirements regarding a true and correct description. If this is done and the managements of establishments are more careful than they have been in the past to protect their different brands, it will be but a short time until a confidence is established which will result in an increased demand for this class of food. This demand the department is ready to encourage and foster, yet it will be readily understood that if any results are to be achieved the manufacturer himself must lend his assistance.

The Canada Food Board in the administration of its work requested the co-operation of this branch, in consequence of which Mr. C. S. McGillivray, chief travelling inspector, canned fruits and vegetables, was permitted to place part of his time at the disposal of the board. This arrangement has proved to be very satisfactory to the board and to the establishments engaged in the manufacture of this class of products. His practical knowledge of the industry was of material assistance in dealing with the many complex problems which confronted the Food Control administration during the past year.

EVAPORATED AND CONDENSED MILK.

Little criticism can be offered in connection with this class of trade. The plants, almost without exception, are of sanitary construction and equipment, the business being one in which sanitation is essential, otherwise great difficulty would be experienced in the keeping quality of the product.

The establishments have been extremely busy, large orders having been received from the Ministry of Food for this product, which was shipped to the Allied armies. Owing to the tremendous shortage of dairy cattle in Continental Europe on account of the war, I have no doubt that a steady and profitable foreign trade can be maintained by Canada.

Tests are being regularly made of the Canadian product to determine its compliance with the standard, and while in some cases variations have occurred, I am satisfied that the managements are making an earnest effort to conform to the law and to place upon the market a product which meets our requirements.